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west component rate of the falling meteorite can not at present be stated. It seems now to be pretty well established that the meteor never crossed to the west side of the Cincinnati Southern Railroad.

For the forthcoming Bulletin of the Kentucky Geological Survey the writer has delineated upon a map of a portion of southeastern Kentucky the area in which all the fragments of the meteorite will probably be found. At present writing seven pieces ranging in weight from 13 oz. to  $5\frac{1}{4}$  lbs. have been found that by their covering of glaze indicate that the split off from the main mass at a considerable distance from the ground. Fifty-two pieces weighing from less than an ounce up to four pounds have been found that are parts of a mass weighing originally about 31 pounds. This mass was broken into these numerous fragments as the result of falling on top of the conglomerate cliff which forms the walls of the gorge of the Cumberland River below the Falls.

The larger fragments, which split off from the main mass at a considerable height, besides the covering of glaze, have the characteristic pittings of meteorites. They are light gray in color, and exhibit a brecciated structure. A chemical examination of the material of which they are composed, made by Dr. Alfred Peter, of the Kentucky Agricultural Experiment Station, shows it to be mainly the mineral enstatite (silicate of magnesium). Through this is disseminated microscopic particles of nickel-iron and iron combined with sulphur in an amount not exceeding two tenths of one per cent. Small amounts of sodium and calcium are also present. The meteorite would therefore be classed as a chondritic aerolite. It has the same specific gravity as enstatite, 3.18.

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May 14, 1919

#### ON THE AURORAL DISPLAY OF MAY 2, 1919

THE notes on this display, in *SCIENCE*, May 23, 1919, lead me to offer the following sum-

mary of my observations on it between 8:38 and 10:30 P.M. (75th meridian time), May 2.

There were streamers of increasing prominence from the time I first observed the display at 8:38, until the culmination at 8:50 to 8:55, when the sky from the north-northwest to north by west was covered from about 10 degrees to a height of 45 or 50 degrees with a deep crimson light. The auroral arch, which was unusually narrow and sharply defined below, and at times subdivided in two or three parts, continued with varying brightness and altitude (base about 8 to 15 degrees) till 10:30, at least. There was some moderate streamer display from time to time. The effect of the auroral display was heightened by the sweep of searchlight beams from the south, and by the presence of the relatively new moon in conjunction with Venus.

A very similar display was observed here February 27, 1919, from 8:50 till after 11 P.M., with crimson coloration in the north to an altitude of about 40° at 10:45 to 10:50.

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#### MEETING OF PLANT PATHOLOGISTS ON LONG ISLAND TO DISCUSS POTATO DISEASES

THE summer potato inspection tour and conference arranged by the Advisory Board, American Plant Pathologists, will be held on Long Island from June 24 to 27, 1919 for the special purpose of studying potato mosaic and leaf roll. The members of the party will meet at the Griffen House, Riverhead, Long Island, Tuesday evening, for dinner, after which there will be a meeting at the Court House.

The next day will be spent in a tour of inspection of test plots of potatoes on the north side from Riverhead to Orient Point. There will be an informal conference at Riverhead during the evening. On June 26, a trip will be made to the south side, the day being spent in the inspection of an experimental test plot at Wainscott, and in conferences at Southampton. The party will then take an evening train to Garden City, Nassau County. The following day, June 27, will be spent in the

inspection of experimental plots at Glen Head and in visiting a few of the large truck farms for which Nassau County is famous. An evening meeting will be held at New York City.

The experimental test plots consist of plantings of healthy, mosaic, and leaf roll seed tubers obtained from northern and central New York, Vermont, Maine, Long Island, Prince Edward Isle, and Bermuda. Records of the behavior during 1918 of the parent plants will be compared with the behavior this year of the progeny. Much of this seed has been planted under the direction of pathologists who have been investigating these diseases. An opportunity will also be afforded to compare fields planted with seed from the north and with Long Island grown seed; of fields planted with mature and with immature seed.

Noted potato pathologists from the United States, Canada and Bermuda will be present to explain the various tests, to point out the characteristic symptoms, and to discuss the results observed here as well as other experiments they have conducted. The bearing of these observations and studies on seed certification will be given consideration at the conferences held during the tour. Invitations have been extended to a pathologist of England, of Ireland and of Holland, and some assurance has been received that one or more of these men will be present. It is expected by means of these observations and discussions that considerable light will be thrown upon the nature and behavior of these serious and baffling diseases and that thereby measures for control will be better understood.

Every pathologist interested in potatoes or in these particular types of diseases should plan, if possible, to attend, for the occasion is unusual in material available for study and in instruction presented. Horticulturists, agronomists and other persons interested are invited to join the pathologists.

Persons planning to attend should at once inform the writer in order that accommodations may be reserved for them. The farmers of Long Island have generously offered to pro-

vide the means of transporting the party about the island.

M. F. BARRUS,

Chairman, Committee of Arrangements

### SCIENTIFIC BOOKS

*Appendages of Trilobites.* By CHARLES D. WALCOTT, Smithsonian Misc., Coll., Vol. 67, No. 4, Cambrian Geol. and Pal., IV., December, 1918, pp. 115-216 + index, Pls. 14-42, Text Figs. 1-3.

In this recent paper Dr. Charles D. Walcott summarizes his investigations of the appendages of trilobites during the past forty-five years, a research undertaken in pursuance of a promise made to Professor Louis Agassiz in 1873. Since that time, he writes, "I have examined and studied all the trilobites that were available for evidence bearing on their structure and organization."

His summary of 1881<sup>2</sup> is reviewed and corrected, together with later papers discussing his various discoveries in this subject.<sup>3</sup> The highly organized trilobite, *Neolenus serratus* (Rominger), from the Burgess shale quarry opened by Dr. Walcott, near Field, B. C., several years ago, shows most graphically in the ten plates devoted to its illustration the highly specialized development of appendages, which is also figured in plates of the Ordovician trilobites, *Isotelus*, *Triarthrus*, *Calymene* and *Ceraurus*. In the figure of *Neolenus* the appendages include antennules, caudal rami, endopodites, epipodites, exopodites, exites and protopodites. The evidence of appendages is supplemented by numerous figured sections of *Ceraurus* and *Calymene*.

<sup>2</sup> The Trilobite: New and Old Evidence Relating to its Organization, *Bull. Mus. Comp. Zool.*, Cambridge, Mass., Vol. VIII., No. 10, 1881, pp. 191-224, Pls. I.-VI.

<sup>3</sup> *Proc. Biol. Soc. Washington*, Vol. IX., 1894, p. 94. *Smithsonian Misc. Coll.*, Vol. 57, 1912, pp. 164, 208, Pl. 24, Figs. 1, 1a. *Idem*, 1911, Pl. 6, Figs. 1, 2; 1912, Pl. 24, Figs. 1, 1a; Pl. 45, Figs. 1, 2, 3, 4. Text-book Pal. (Zittel), Eastman 2d ed., 1913, Vol. I., p. 701, Fig. 1,343, p. 716, Figs. 1,376, 1,377. *Smithsonian Misc. Coll.*, Vol. 57, 1912, pp. 149-153.